



THE CASE FOR A MORE HIGHLY TRAINED ECOLOGICAL WORKFORCE

GROWTH OF ECOLOGICAL RESTORATION FUNDING

As the impacts of climate change become more apparent and as California's natural resources continue to be strained by its growing population, the importance of conservation and restoration efforts is escalating. Ecosystem Service projects are increasing in size and complexity as the demand for impactful restoration, natural infrastructure, and resource protection grows. In addition, the need to protect civic infrastructure from climate change has resulted in many traditional public works projects integrating environmental resiliency and contingency measures.

California and the nation have demonstrated its commitment to restoring ecological function through a number of large-scale efforts, using a variety of funding mechanisms (bond measures, federal, state and local government contributions, NGO project sponsorship and private investment). Between 2014-2018, California voters approved over \$11.5 billion in public funding for projects to protect and restore water quality, ecosystems, and public lands, and billions more have been committed in the recent Federal and State budgets.

These financial investments reflect a growing commitment to ecological restoration and well-being. Public perception of ecosystem services is evolving as economic and scientific data show that restored ecosystems provide economic benefits that often outweigh the benefits of the economy's long-standing resource-extraction model. The perception shift is clearly demonstrated by the voters' and legislator's willingness to approve the sweeping funding measures mentioned above.

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SHORTAGE OF SKILLED RESTORATION WORKERS

Ecosystem service projects are primarily constructed within or in close proximity to sensitive resources, including wetlands and streams within resource agencies' jurisdictions, often overlap with critically endangered or threatened species habitat and underlain by precious cultural resources. Without properly trained crews that can work in these environments, construction activities that are intended to 'restore' or 'enhance' the resources can result in unintended environmental degradation, species mortality, and destruction of cultural artifacts instead.

Although public support and dedicated funding are positive developments and represent enormous opportunities, several challenges lay ahead for the field of ecological restoration. Chief among these challenges is a shortage in skilled workers. Leaders across the restoration economy report significant challenges in finding workers with the understanding and skills to work effectively on ecologically sensitive projects.

In conversations with industry leaders, they report that the extent to which workers are trained in this specialty varies dramatically between contractors, NGO's and government agencies—and is primarily based on on-the-job training, with no set standards across the industry. This represents an enormous strategic opportunity for the ecological restoration economy to elevate itself and position the industry for the future. If environmental restoration leaders work with employers, education, workforce development, and resource agency partners to establish a standardized curriculum with milestones and industry-recognized certification, this could serve to advance the field of ecological restoration on a number of fronts:

- Assisting businesses in accessing more skilled workers to meet the demands of ecological restoration projects.
- Moving more job seekers into these occupations which provide excellent wages and benefits.
- Bridging the information gap between resource agency staff/project proponents and the trade workers delivering the projects on-the-ground
- Providing upward mobility for trade workers and increasing equitable access to the public investments in ecological projects
- Increase the pace and scale of restoration project implementation
- Improve project outcomes
- Increase project cost efficiency
- Increase community resiliency to major ecological changes



ADVANCE DIVERSITY EQUITY AND INCLUSION

The establishment of a standardized curriculum and an industry-recognized certificate will create pathways to living-wage, lifetime careers for all members of our community regardless of socio-economic or cultural background inclusive of all levels of education and English-language proficiency. This will result not only in providing jobs with excellent wages and benefits, but also in more successful restoration project outcomes, benefiting both the economic health of the community and environmental resilience to a changing climate. The curriculum and certificate program directly address statewide and federal goals for diversity, equity and inclusion objectives that are intended as part of these public investments.



INCREASED ECONOMIC EFFICIENCY AND SHARED REGULATORY RESPONSIBILITY

The state of California is leading the way by undertaking major policy initiatives to respond to climate change, including increased funding, a commitment to 30x30 (30% of CA to be protected lands or marine by 2030), and the Cutting Green Tape Initiative to reduce regulatory burden in order to speed the completion of large-scale restoration projects throughout the state. Success of each of these efforts requires a workforce equipped with an understanding and appreciation of the complexity of restoration projects in sensitive habitats and in proximity to species of concern and cultural resources, yet currently no publicly available training program provides those skills and knowledge.

In an effort to minimize the negative outcomes that can result from untrained personnel working in sensitive habitats, the resource agencies who issue permits for these projects impose stringent regulations and constraints on construction activities such as logistics, work windows and methods. These constraints increase costs which are not always considered during project conception, budgeting and planning.



Furthermore, while the direct interaction with the natural resources is occurring at the trade workers' level, during the procurement process there is no current qualifications metric to assure the labor force has the skill sets for working in ecologically sensitive zones.

Training will provide permit holders and the resource agencies that issue permits with a reliable metric that they can use to assess the qualifications of the on-the-ground workforce within construction firms and field staff within land management agencies and utility service providers, thereby enabling greater flexibility in terms of permit conditions that are currently intended to avoid the damage caused by under-trained workers. This will lead to lower costs for projects and a greater level of project ownership by workers, resulting in better environmental outcomes.

IMPACT ON RESTORATION INDUSTRY

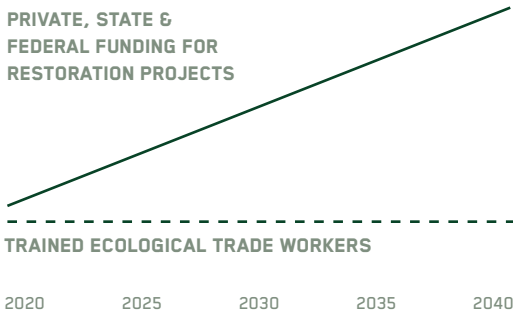
The limiting factor for contractors implementing restoration work is the availability of trade workers with the requisite training in basic tenets of ecologic restoration, environmental regulations and regulators, protection of listed species and habitats, and a general understanding of the responsibility associated with working in sensitive environments. This workforce shortage is threatening the long-term viability of the industry at a time when it is experiencing exponential growth, with more projects in the pipeline than there are ecologically trained workers to do them.

The potential development of an entirely new ecological job specialty will help elevate existing, traditional trade work categories—careers which do not require college degrees or English language proficiency—and allow individuals to support their families while doing important work to protect natural resources for future generations. Furthermore, trained ecological restoration construction workers will be a force to promote future projects and ensure laws are passed that further protect and enhance the industry.

IMPACT ON WORKERS

Today, even traditional large civil construction projects have environmentally sensitive aspects to them, so the need for these skills extends beyond specialty firms. A conservative formula of 25% of a total project cost to administration, planning, design & permitting, means that 75% of total project cost to go to the construction contractor, over 50% of which goes to the trade workforce, resulting in an estimated 40% of total project cost going into labor wages.

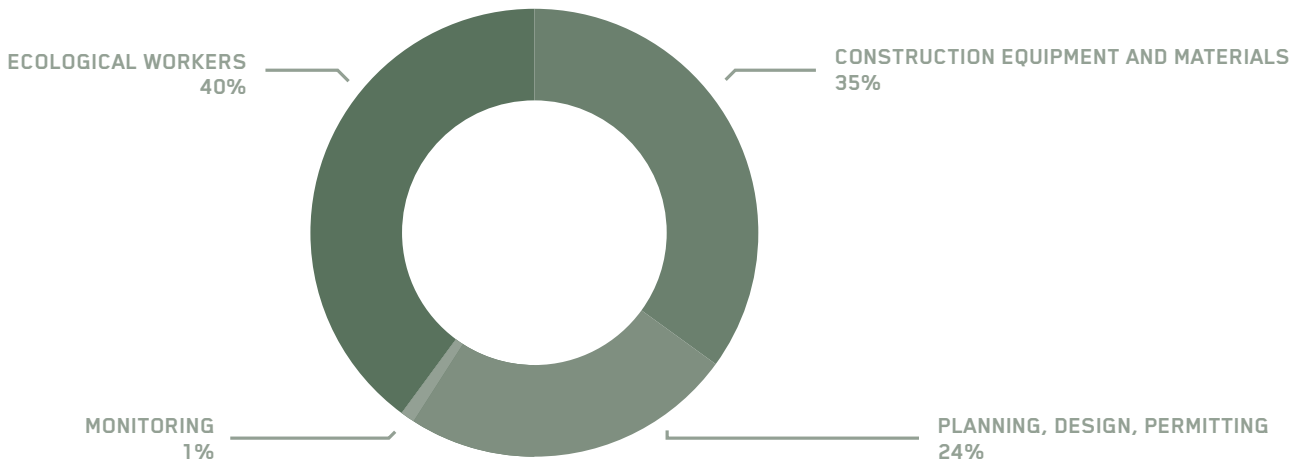
PRIVATE, STATE &
FEDERAL FUNDING FOR
RESTORATION PROJECTS





With the largest percentage of money invested in ecological restoration projects going directly into the hands of the workers implementing the projects, the growth of restoration funding has the potential to dramatically uplift not just the health of the environment and the health of the communities near the restoration sites but also the financial health of the communities the workers call home through direct access to living wage jobs.

As more young people identify climate change as the defining issue of their generation, more are seeking careers that will have a positive environmental impact. The Ecological Workforce Initiative creates access to living wage, lifetime careers, doing meaningful work protecting and restoring the ecosystems upon which we depend. These careers are available to all members of our communities regardless of social, economic, or educational background.





CATALYZING CHANGE

The Ecological Workforce Initiative (EWI) is catalyzing partners throughout the restoration industry—restoration companies, environmental non-profit organizations, training providers, workforce development partners, resource agencies and policymakers to develop a respected Ecological Workforce qualifications certificate. While many workforce training programs give basic skills and work experience, there are none that provide the specific skills and knowledge needed for restoration trade work. The Ecological Workforce Initiative is creating standardized environmental compliance training for the laborers, equipment operators and other crew members who implement environmental restoration projects. The aim is to assure that on-the-ground workers are properly equipped with the information they need so that species and habitats are protected, permit conditions are adhered to, and environmental project goals are achieved. The training will meet the workforce needs of a growing industry and equip a large segment of our communities with access to lifetime, living-wage careers with minimal barriers to entry.

The concept behind the certification is that individual workers would be certified, not the companies they work with or work for. This way, the certification runs with the individual and they should be able to use it to leverage increased pay, upward mobility, and improved opportunities for leadership in the industry.

PROGRAM STATUS

The Ecological Worker Awareness and Compliance Training Program is a 10-hour curriculum designed to be an enhancement to existing workforce development programs. Developed by industry experts, it delivers a background in ecological concepts and ecosystem components, an overview of environmental laws, an understanding of federal and state resource agencies, a familiarity with protected resources, and an appreciation for the workers' role in resource protection. The curriculum advances understanding of why environmental regulations are in place, enables informed on-site decision making, and improves project outcomes. Further description of the training program and examples of the curriculum can be viewed at ecologicalworkforce.org.



Our initial Pilot Program, implemented in partnership with the Workforce Alliance of the North Bay and the Conservation Corps of the North Bay (CCNB), was completed in July 2021. The program included classroom education of a specially designed environmental compliance curriculum and 8 weeks of hands-on restoration work experience at worksite partners in Marin and Napa counties and ended with a hiring fair. 100% of the participants experienced positive outcomes—75% were offered employment and 25% continued on with CCNB to complete their high school diplomas, utilizing their new knowledge in their work.

Since that time EWI has delivered the training to over 250 existing and new members of the restoration workforce, of all job types. Multiple new programs utilizing our 4th generation of updated and expanded bi-lingual and bi-cultural curriculum are underway in partnership with local conservation corps, land management agencies and private employers throughout 2023.

In addition to continually refining and improving the curriculum, EWI is developing companion “tailboard” materials to help site managers reinforce the practical application of a variety of best management practices and common permit conditions at the job site. Finally, EWI intends to continue working with partners to expand the curriculum in the coming years to include additional focused training modules on topics such as nesting birds, general biological monitoring, practices to protect water quality, etc.

**FOR MORE INFORMATION, OR TO JOIN THE
CONVERSATION, CONTACT:**

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